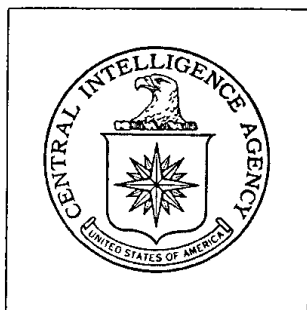


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DIRECTORATE OF
INTELLIGENCE

Industrial Facilities
(Non-Military)

Basic Imagery Interpretation Report

Selected Iron and Steel Plants

China

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RCS 13/0010/73

DATE DECEMBER 1972

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CENTRAL INTELLIGENCE AGENCY
Directorate of Intelligence
Imagery Analysis Service

ABSTRACT

This report presents initial basic studies on 12 major iron and steel plants in China. These plants will be included in future annual basic reporting on China's iron and steel production facilities. The cutoff date for information in this report is February 1972.

Ten of the plants -- at Ching-tao, Ho-fei (2 plants), Hsin-yu, Hsing-tai, Lien-yuan, Lin-fen, Liu-chou, Tung-hua, and Yen-chuang -- have been observed operating. The other two plants, at Pan-chiao and She-hsien, were either complete or nearing completion in February 1972, but had not yet been seen in operation. On the latest coverage, construction activity was observed at all of the plants except Ho-fei Iron and Steel Plant.

This report includes an annotated photograph, measurements of significant features, and a discussion of the status and activity for each of the plants studied.

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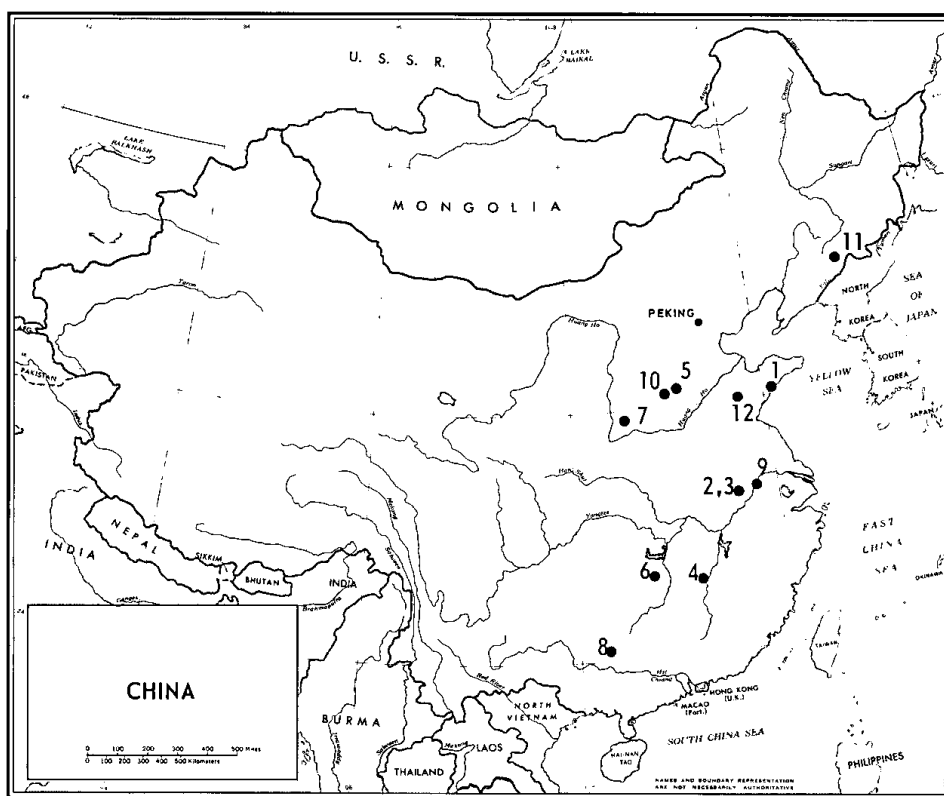


FIGURE 1. LOCATION MAP.

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INTRODUCTION

The iron and steel plants included in this report are located in the eastern part of China (see Figure 1). Most of them are near iron and steel plants described in previous Basic Reports.

The length and width measurements in the key to annotations for each plant when multiplied do not always equal the corresponding square feet of roof cover given. The area of roof cover was determined by taking into account all protrusions, while the length and width measurements are for the main part of the structure.

The level of production activity is indicated as inactive (no visible signs of plant operation), low activity (up to 30 percent of the total plant facilities in operation), moderate activity (between 30 and 70 percent of the total plant facilities in operation), and high activity (from 70 to 100 percent of the total plant facilities in operation).

The approximate size of the blast furnaces was determined by comparative analysis. Blast furnaces are described as small (up to 150 tons per day), medium (200 - 700 tons per day), and large (700 - 1,300 tons per day).

The following list of iron and steel plants included in this study is keyed to Figure 1:

1. Ching-tao Steel Plant No. 3.
2. Ho-fei Iron Plant.
3. Ho-fei Steel Plant.
4. Hsin-yu Iron and Steel Plant.
5. Hsing-tai Iron and Steel Plant.
6. Lien-yuan Iron and Steel Plant.
7. Lin-fen Iron and Steel Plant.
8. Liu-chou Coke Iron and Steel Plant.
9. Pan-chiao Iron Plant.
10. She-hsien Iron and Steel Plant.
11. Tung-hua Iron Plant Tung-pien-tao.
12. Yen-chuang Iron Plant.

Requirement

COMIREX N03
Support Number 423837

Document References

CIA. RCS-13/0066/72, Selected Iron and Steel Plants, China, June 1972, 25X1
[] (TOP SECRET [])

CIA. RCS-13/0061/71, Selected Iron and Steel Plants, China, June 1971, 25X1
[] (TOP SECRET [])

CIA. RCS-13/0047/70, Selected Iron and Steel Plants, China, May 1970, 25X1
[] (TOP SECRET [])

CIA. RCS-13/0241/69, Selected Iron and Steel Plants, China, June 1969, 25X125X1
[] (TOP SECRET [])

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INSTALLATION OR ACTIVITY NAME		COUNTRY
Ho-fei Iron Plant*		CH
UTM COORDINATES	GEOGRAPHIC COORDINATES	
NA	31-50-00N 117-21-40E	
MAP REFERENCE		
2nd RTS. USATC, Series 200, Sheet M0493-3HL, 4th ed, Feb 72, Scale 1:200,000		
(SECRET)		
LATEST IMAGERY USED		NEGATION DATE (If required)
NA		NA

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* The name of this plant should be Ho-fei Iron and Steel Plant, as it contains a side-blown converter shop for steel production. Action has been initiated to have the name changed.

BASIC DESCRIPTION

Ho-fei Iron and Steel Plant is located 4.6 nm southeast of the center of Ho-fei and 1.5 nm southeast of Ho-fei Steel Plant. The plant is rail and road served, and a new rail line under construction will connect it with the Ho-fei Steel Plant. The iron and steel plant occupies an irregular-shaped area approximately 2,650 by 2,200 feet (Figure 3). No security measures have been observed.

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The plant contains two by-product coke oven batteries, a coke by-products section, an ore handling facility, two small blast furnaces, a side-blown converter shop with two converters and two cupola furnaces, a transformer substation, a water treatment facility, and a collocated possible nitrogen fertilizer plant.

When the plant was first observed in February 1962, the blast furnaces were in an early stage of construction. By November 1964 the side-blown converter shop, the by-product coke oven batteries, the coke by-products section, the transformer substation, and the possible nitrogen fertilizer plant were also under construction. In December 1970 the side-blown converter shop, one by-product coke oven battery, the water treatment facility, and the transformer substation were complete. In July 1971 the two blast furnaces, the ore handling facility, the second by-product coke oven battery, and the coke by-products section were complete. The possible nitrogen fertilizer plant was complete by November 1971.

A low level of activity was observed at the plant between December 1970, when the plant was first observed operating, and July 1971. A high level of activity was observed at the plant in November 1971. The two blast furnaces, the by-product coke oven batteries, and the side-blown converter shop were observed operating.

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Key to Annotations
(Figure 3)

<u>Item No.</u>	<u>Description</u>	<u>Dimensions (ft)</u>	<u>Roof Cover (sq ft)</u>	<u>Remarks</u>
1	Coke By-products Section			Constructed between Jun 64 and Jul 71.
2	By-product Coke Oven Batteries (2)			One battery constructed between Jun 64 and Dec 70. Second battery constructed between Jun 64 and Jul 71.
3	Ore Handling Facility			
4	Blast Furnaces (2)			Small. Observed under construction in Feb 62. First observed operating in Jul 71.
5	Transformer Substation			Two transformers.
6	Water Treatment Facility			Complete by Dec 70.
7	Side-blown Converter Shop		44,850	Two converters and two cupola furnaces. One section built between Jun 64 and Sep 65. Expanded between Sep 65 and Dec 70.
8	Rail Line U/C			First observed under construction in Jul 71.
9	Possible Nitrogen Fertilizer Plant			Constructed between Jun 64 and Nov 71.

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INSTALLATION OR ACTIVITY NAME		COUNTRY
Ho-fei Steel Plant*		CH
UTM COORDINATES	GEOGRAPHIC COORDINATES	25X1
NA	31-50-50N 117-20-10E	
MAP REFERENCE		
2nd RTS. USATC, Series 200, Sheet M0493-3HL, 4th ed, Feb 72, Scale 1:200,000		
(SECRET)		
LATEST IMAGERY USED		NEGATION DATE (if required)
NA		25X1

* The name of this plant should be Ho-fei Steel Products Plant, as it does not produce either steel or iron. Action has been initiated to have the name changed.

BASIC DESCRIPTION

Ho-fei Steel Products Plant is located 3.1 nm southeast of the center of Ho-fei and 1.5 nm northwest of Ho-fei Iron and Steel Plant. The plant is rail and road served, and occupies an irregular-shaped area of approximately 5,200 by 2,300 feet (Figure 4). It is secured by a wall. A rail line is under construction which will connect this plant with the Ho-fei Iron and Steel Plant.

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In November 1971 the plant contained three rolling mills, a foundry, a possible foundry, a forge/foundry, a steam plant, two workshops, an unidentified facility, three small partially dismantled blast furnaces, five unidentified buildings under construction, and numerous storage/support buildings.

When the plant was first observed in February 1962, the partially dismantled blast furnaces, the foundry (Item 10) and a section of one rolling mill (Item 3) were seen. By November 1964 two rolling mills (Items 3 and 4) and the forge/foundry appeared complete. In September 1965 the two workshops, the third rolling mill (Item 6), and an unidentified facility (Item 9) also appeared complete. The possible foundry and the steam plant were built by June 1968. Two unidentified buildings were observed under construction in December 1970 and three more in February 1971; none of them were completed by November 1971.

The plant was first observed operating in June 1968 as indicated by ingots and rolled products in open storage. The previous coverage was poor and it was difficult to determine operational status. On the latest coverage in November 1971, a rolling mill was emitting smoke, and ingots and rolled products were observed in open storage. Since the plant contains no steel furnaces and produces no iron, its only production is the rolling, forging, and casting of steel products.

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Key to Annotations
(Figure 4)

Item No.	Description	Dimensions (ft)	Roof Cover (sq ft)	Remarks	
1	Workshop	Irregular		Built between Feb 62 and Sep 65.	25X1
2	Workshop	Irregular		Built between Feb 62 and Sep 65.	
3	Rolling Mill	Irregular		Under construction in Feb 62. Complete by Nov 64.	
4	Rolling Mill	Irregular		Built between Feb 62 and Nov 64.	
5	Possible Foundry			Complete by Jun 68.	25X1
6	Rolling Mill	Irregular		Built between Feb 62 and Sep 65.	
7	Steam Plant			Complete by Jun 68.	25X1
8	Forge/Foundry	Irregular		Built between Feb 62 and Nov 64.	
9	Unidentified Facility			Built between Feb 62 and Sep 65.	
10	Foundry	Irregular		Present in Feb 62.	
11	Blast Furnaces (3)			Small, old type. Partially dismantled. Never observed operating.	
12	Rail line U/C			Observed under construction in Jul 71.	
13	Unidentified Building U/C			Under construction in Dec 70.	
14	Unidentified Building U/C			Under construction in Feb 71.	
15	Unidentified Building U/C			Under construction in Dec 70.	
16	Unidentified Building U/C			Under construction in Feb 71.	
17	Unidentified Building U/C			Under construction in Feb 71.	

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INSTALLATION OR ACTIVITY NAME		COUNTRY	
Hsin-yu Iron and Steel Plant		CH	
UTM COORDINATES	GEOGRAPHIC COORDINATES		25X1
NA	27-47-20N 114-55-00E		
MAP REFERENCE			
8th RTS. USATC, Series 200, Sheet M0498-2HL, 3rd ed, Nov 69, Scale 1:200,000			
(SECRET)			
LATEST IMAGERY USED		NEGATION DATE (If required)	
		NA	25X1

BASIC DESCRIPTION

Hsin-yu Iron and Steel Plant is located on the southwest edge of Hsin-yu. The plant is rail and road served. It occupies two separate irregular-shaped areas (Figure 5). A third area (Item 25) in an early stage of construction may be associated. No security measures have been observed. A small possible cement plant (Item 1) is under construction immediately northwest of the main plant area. It may use the slag waste from the blast furnaces as raw material for the production of cement for local usage.

The plant consists of two by-product coke oven batteries, a coke by-products section, an ore sintering plant under construction, four medium blast furnaces, one small blast furnace, a pig iron casting building, three probable forge shops, a probable machine shop, a probable heat treatment building, a probable fabrication building, railroad and ladle car repair shops, a transformer substation, a steam plant, a water treatment facility, and several unidentified buildings and areas in various stages of construction.

When the plant was first observed in March 1963, two medium blast furnaces were operating and a third was in an early stage of construction. By March 1964 the fourth medium blast furnace was under construction.

In August 1967 the third blast furnace and the pig iron casting building were operating. Two probable forge shops (Items 7 and 14) appeared externally complete. A third probable forge shop (Item 9) and the probable fabrication building were under construction.

In July 1968 the third probable forge shop (Item 9), the probable fabrication building, and the probable heat treatment building appeared externally complete. In September 1969 one by-product coke oven battery and the coke by-products section were under construction. In July 1970, the by-product coke oven battery and an addition to a probable forge shop (Item 14) were complete, and the small blast furnace, the steam plant, and the water treatment facility were under construction.

By July 1971 the fourth medium blast furnace, the small blast furnace, the steam plant, the water treatment facility, and the coke by-products section were complete. The sintering plant, the second by-products coke oven battery, and three unidentified buildings (Items 6, 20, and 21) and an unidentified area (Item 19) were under construction.

By January 1972, the second coke oven battery was complete, footings were present for buildings in three areas of unidentified activity (Items 8, 16, and 25), the substation had been expanded, and construction was underway on a pipeline to the Hsin-yu Nitrogen Fertilizer Plant located at 27-46-30N 114-54-00E. 25X1

The plant was operating at least at a low level on all coverages from March 1963 through July 1971. In January 1972 the plant was operating at a moderate level. All five blast furnaces, the two coke oven batteries, the coke by-products section, and one probable forge shop were operating.

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Key to Annotations
(Figure 5)

<u>Item No.</u>	<u>Description</u>	<u>Dimensions (ft)</u>	<u>Roof Cover (sq ft)</u>	<u>Remarks</u>
1	Possible Cement Plant U/C			One possible vertical kiln.
2	Pig Iron Casting Building		6,200	Complete in Aug 67. 25X1
3	Blast Furnaces (4)			Medium. Two complete in Mar 63. Third complete in Aug 67. Fourth complete in Jul 71.
4	Ore Sintering Plant U/C			Construction began prior to Jul 71.
5	Railroad and Ladle Car Repair Shops			
6	Unidentified Building U/C	Irregular		Construction began prior to Jul 71. 25X1
7	Probable Forge Shop	Irregular		Complete in Aug 67.
8	Unidentified Construction			Construction first observed in Jan 72.
9	Probable Forge Shop			Built between Sep 66 and Jul 68. 25X1
10	Probable Heat Treatment Building	Irregular		Built between Aug 67 and Jul 68.
11	Probable Fabrication Building		63,900	Built between Sep 66 and Jul 68. 25X1
12	Blast Furnace			Small. Built between Sep 69 and Jul 71.
13	Transformer Substation			First observed in Aug 67. Expansion started between Jul 71 and Jan 72.
14	Probable Forge Shop	Irregular	21,570	A section complete in Aug 67. Addition completed by Jul 70.
15	Probable Machine Shop	Irregular		A section present in Mar 64. Expansion complete by Sep 69. 25X1
16	Unidentified Construction			Construction started between Jul 71 and Jan 72.
17	Coke by-products Section			Construction started between Jul 68 and Sep 69. Complete by Jul 71.
18	Steam Plant			Built between Sep 69 and Jul 71.
19	Unidentified Area U/C			Construction began prior to Jul 71.

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Key to Annotations
(continued)

<u>Item No.</u>	<u>Description</u>	<u>Dimensions (ft)</u>	<u>Roof Cover (sq ft)</u>	<u>Remarks</u>	
20	Unidentified Building U/C		25,600	Construction began prior to Jul 71.	25X1
21	Unidentified Building U/C	Irregular	29,490	Construction began prior to Jul 71.	
22	Water Treatment Facility			Built between Sep 69 and Jul 71.	
23	By-product Coke Oven Batteries (2)			Construction began between Jul 68 and Sep 69. One complete by Jul 70. Second complete by Jan 72.	
24	Pipeline, Pumphouse, and Storage Tank U/C			Construction began between Jul 71 and Jan 72.	
25	Unidentified Area U/C			Construction began between Jul 71 and Jan 72.	

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INSTALLATION OR ACTIVITY NAME		COUNTRY	
Lien-yuan Iron and Steel Plant		CH	
UTM COORDINATES	GEOGRAPHIC COORDINATES		25X1
NA	27-45-20N 111-57-49E		
MAP REFERENCE			
15th RTS. USATC, Series 200, Sheet M0497-5HL, 2nd ed, Nov 65, Scale 1:200,000			
(SECRET)			25X1
LATEST IMAGERY USED		NEGATION DATE (If required)	
		NA	

BASIC DESCRIPTION

Lien-yuan Iron and Steel Plant is located 1 nm west-northwest of Lou-ti-chen and 16.5 nm east-northeast of Lien-yuan. The plant is rail and road served and occupies an area of approximately 312 acres (Figure 7).

In February 1972 the plant consisted of two medium and two small blast furnaces, a side-blown converter shop with at least two converter furnaces, four rolling mills (one being expanded and one under construction), a thermal power plant, a transformer substation, and numerous storage/support buildings. In addition, the following facilities were under construction: an ore sintering plant, a by-product coke oven battery, a coke by-products section, and an unidentified building.

In December 1964, when the plant was first observed, it contained the four blast furnaces, the side-blown converter shop, two rolling mills, and a thermal power plant. A third rolling mill was constructed between December 1964 and November 1968 (Item 11).

By September 1971 a coke by-products section, a by-product coke oven battery, an ore sintering plant, a fourth rolling mill (Item 10), a large addition to an existing rolling mill (Item 11), and an unidentified building were under construction. In February 1972 these facilities were still under construction.

The plant has been observed operating at a low level on all coverages from December 1964 through September 1971. A moderate level of activity was observed at the plant in February 1972. At least three blast furnaces, the side-blown converter shop, and two rolling mills were operating.

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Key to Annotations
(Figure 7)

<u>Item No.</u>	<u>Description</u>	<u>Dimensions (ft)</u>	<u>Roof Cover (sq ft)</u>	<u>Remarks</u>
1	Ore Sintering Plant U/C			Construction began between Sep 69 and Sep 71.
2	Blast Furnaces (2)			Medium. Present in Dec 64.
3	Blast Furnaces (2)			Small. Present in Dec 64.
4	Side-blown Converter Shop	Irregular	97,000	At least two converter furnaces. Present in Dec 64.
5	Rolling Mill	935 x 105	114,030	Present in Dec 64.
6	Coke By-Products Section U/C			Construction began between Sep 69 and Sep 71.
7	By-Product Coke Oven Battery U/C			Construction began between Sep 69 and Sep 71.
8	Unidentified Building U/C			Construction began between Sep 69 and Sep 71.
9	Transformer Substation			
10	Rolling Mill U/C	Irregular (about 1200' long)	210,235	Late stage of construction. Construction began between Sep 69 and Sep 71.
11	Rolling Mill	620 x 55	35,445	Constructed between Dec 64 and Nov 68. Expansion began between Sep 69 and Sep 71.
12	Rolling Mill	Irregular	71,235	Present in Dec 64.
13	Thermal Power Plant			Present in Dec 64.

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INSTALLATION OR ACTIVITY NAME		COUNTRY
Liu-chou Coke Iron and Steel Plant		CN
UTM COORDINATES	GEOGRAPHIC COORDINATES	25X1
NA	24-23-08N 109-23-15E	
MAP REFERENCE		
15th RTS. USATC, Series 200, Sheet M0497-22HL. 3rd ed. Mar 70. Scale 1:200,000		25X1
(SECRET)		
LATEST IMAGERY USED	NEGATION DATE (if required)	
	NA	

BASIC DESCRIPTION

Liu-chou Coke Iron and Steel Plant is located 4.5 nm north-northwest of Liu-chou. The plant is rail and road served, and occupies an irregular-shaped area of approximately 5,500 by 4,000 feet (Figure 9). No security measures have been observed.

The plant contains four by-product coke oven batteries (two under construction), a coke by-products section under construction, two medium blast furnaces, a pig iron casting building, a basic oxygen furnace under construction, an air separation plant, a side-blown converter shop with three converters and one cupola furnace, two rolling mills, four forge/foundries, a probable firebrick plant, a probable coal processing facility, two unidentified buildings under construction, six abandoned beehive coke oven batteries, and numerous storage/support buildings.

When the plant was first observed in September 1963, two blast furnaces, a side-blown converter shop, a rolling mill (Item 12), and the probable coal processing facility were being built. Six beehive coke oven batteries located at the plant appeared to be abandoned.

By November 1964 one blast furnace and the probable firebrick plant appeared complete. The side-blown converter shop contained one converter and one cupola furnace. In August 1966 footings for the second rolling mill (Item 11) were seen. By May 1967 a forge/foundry (Item 16) and a rail line into the north side of the converter shop had been constructed.

In September 1969 two by-product coke oven batteries (Item 5) were in an early stage of construction. By February 1971, the two batteries were operating, both rolling mills and the second blast furnace were complete, and the pig iron casting building and three rail lines into the north end of the converter shop were constructed. Also, a small addition to the converter shop had been constructed, and two converters had been added.

By January 1972, three additional forge/foundries (Items 13, 14, and 17) and the air separation plant were constructed. Two unidentified buildings (Items 15 and 18), the basic oxygen furnace, two additional by-product coke oven batteries (Item 3), and the coke by-products section were under construction. The probable coal processing facility was being expanded.

The plant was first observed operating in August 1966. On coverage between May 1967 and February 1971 the plant appeared to be either inactive or operating at a low level. In January 1972 a moderate level of activity was observed. One blast furnace, the pig iron casting building, two by-product coke oven batteries, one rolling mill, and the probable firebrick plant were operating.

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Key to Annotations
(Figure 9)

Item No.	Description	Dimensions (ft)	Roof Cover (sq ft)	Remarks
1	Pig Iron Casting Building			Constructed between Sep 69 and Feb 71.
2	Blast Furnaces (2)			Medium. Under construction in Sep 63. One complete by Nov 64. Second one complete by Feb 71.
3	By-Product Coke Oven Batteries U/C (2)			First observed under construction in Jan 72.
4	Coke By-Products Section U/C			First observed under construction in Jan 72.
5	By-Product Coke Oven Batteries (2)			Constructed between Sep 69 and Feb 71.
6	Beehive Coke Oven Batteries (6)			Abandoned when first observed in Sep 63.
7	Side-blown Converter Shop	Irregular		Under construction in Sep 63. Contained one converter and one cupola furnace in Nov 64. Two more converters added by Feb 71.
8	Probable Firebrick Plant	Irregular		Appeared complete in Nov 64.
9	Air Separation Plant			Constructed between Feb 71 and Jan 72.
10	Probable Coal Processing Facility			Under construction in Sep 63. First section complete in Nov 64. Expansion observed in Jan 72.
11	Rolling Mill	Irregular		Constructed between Aug 66 and Feb 71.
12	Rolling Mill	Irregular	76,345	Under construction in Sep 63. Complete in Feb 71.
13	Forge/Foundry	Irregular		Constructed between Sep 69 and Jan 72.
14	Forge/Foundry	Irregular		Constructed between Sep 69 and Jan 72.
15	Unidentified Building U/C			First observed under construction in Jan 72.
16	Forge/Foundry	261 x 98		Constructed between Aug 66 and May 67.
17	Forge/Foundry	Irregular	40,915	Constructed between Sep 69 and Jan 72.
18	Unidentified Building U/C	Irregular	109,330	First observed under construction in Jan 72.
19	Basic Oxygen Furnace U/C			First observed under construction in Jan 72.

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INSTALLATION OR ACTIVITY NAME		COUNTRY
Pan-chiao Iron Plant		CH
UTM COORDINATES	GEOGRAPHIC COORDINATES	
NA	31-55-35N 118-36-15E	
MAP REFERENCE		
8th RTS. USATC, Series 200. Sheet M0493-4HL. 4th ed. Apr 68. Scale 1:200,000		
(SECRET)		
LATEST IMAGERY USED		NEGATION DATE (If required)

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BASIC DESCRIPTION

Pan-chiao Iron Plant is located approximately 2 nm southwest of Pan-chiao and 12 nm southwest of Nan-ching. The plant is road and rail served. Barges on the Yangtze River also bring raw material to the plant. A rail line connects the river transshipment point, located about 1 nm northwest, with the plant. The plant is unsecured and occupies an irregular area of approximately 430 acres (Figure 10).

In February 1972 the plant consisted of an ore sintering plant, two medium blast furnaces, a pig iron casting building, two by-product coke oven batteries, a coke by-products section under construction, four workshops, a steam plant under construction, a transformer substation, three large storage buildings, and numerous small storage/support buildings.

Construction of the plant began between February and December 1969. The two blast furnaces, the ore sintering plant, and the by-product coke oven batteries were in a very early stage of construction in December 1969.

Between December 1969 and April 1971 construction began on the coke by-products section, three workshops (Items 6, 7, and 8), and the steam plant. The pig iron casting building was constructed during this time period. Another workshop (Item 9) was constructed between April 1971 and February 1972.

In February 1972, the plant components appeared to be externally complete and numerous rail and ladle cars were observed in the plant area. But due to partial cloud cover it was not possible to determine if the plant had started operating or was in a final stage of construction.

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Key to Annotations
(Figure 10)

<u>Item No.</u>	<u>Description</u>	<u>Dimensions (ft)</u>	<u>Roof Cover (sq ft)</u>	<u>Remarks</u>
1	Pig Iron Casting Building			Constructed between Dec 69 and Apr 71.
2	Blast Furnaces (2)			Medium. Constructed between Feb 69 and Feb 72.
3	Ore Sintering Plant			Constructed between Feb 69 and Feb 72.
4	By-product Coke Oven Batteries (2)			Construction began between Feb 69 and Dec 69. Probably complete in Feb 72.
5	Coke By-products Section U/C			Construction began between Dec 69 and Apr 71.
6	Workshop	265 x 105	27,825	Construction began between Dec 69 and Apr 71.
7	Workshop	355 x 55	19,525	Construction began between Dec 69 and Apr 71.
8	Workshop	445 x 70	31,150	Construction began between Dec 69 and Apr 71.
9	Workshop	200 x 55	11,000	Constructed between Apr 71 and Feb 72.
10	Transformer Substation			Present in Apr 71.
11	Storage Buildings (3)	220 x 140 235 x 65 260 x 65	30,800 15,275 16,900	Built between Dec 69 and Apr 71; additions built between Apr 71 and Feb 72.
12	Steam Plant U/C			Construction began between Dec 69 and Apr 71.

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INSTALLATION OR ACTIVITY NAME			COUNTRY	
She-hsien Iron and Steel Plant			CH	
UTM COORDINATES	GEOGRAPHIC COORDINATES		COMIREX NO.	NIETB NO.
NA	36-35-50N 113-44-10E		None	None
MAP REFERENCE				
15th RTS. USATC, Series 200, Sheet M0382-24HL. 3rd ed. Aug 67. Scale 1:200,000				
(SECRET)				
LATEST IMAGERY USED			NEGATION DATE (If required)	

BASIC DESCRIPTION

She-hsien Iron and Steel Plant is located 4.2 nm northeast of She-hsien and 35.5 nm west of Han-tan. The plant is rail and road served (Figure 11). No security measures have been observed.

In June 1970 a rail line was under construction into the plant site, and by December 1970 ground preparation and footings were observed for several of the plant facilities. In February 1972, a firebrick plant was complete and the following facilities were in various stages of construction: a probable ore sintering plant, two by-product coke oven batteries, a coke by-products section, two medium blast furnaces, a pig iron casting building, several unidentified buildings, and a thermal power plant.

Only the thermal power plant and the firebrick plant were observed operating in February 1972. One blast furnace was at least nearing completion but its operational status could not be determined.

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Key to Annotations
(Figure 11)

<u>Item No.</u>	<u>Description</u>	<u>Dimensions (ft)</u>	<u>Roof Cover (sq ft)</u>	<u>Remarks</u>
1	Firebrick Plant			Observed operating in Jan 72.
2	Probable Ore Sintering Plant U/C			
3	Coke By-products Section U/C			
4	By-product Coke Oven Batteries U/C (2)			
5	Pig Iron Casting Building U/C			Two conveyors.
6	Transformer Substation			Three transformers.
7	Thermal Power Plant U/C			Observed operating in Jan 72. South end of plant not complete.
8	Blast Furnaces U/C (2)			Medium.

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INSTALLATION OR ACTIVITY NAME			COUNTRY	
Tung-hua Iron Plant Tung-pien-tao*			CH	
UTM COORDINATES	GEOGRAPHIC COORDINATES		COMIREX NO.	NIETB NO.
NA	41-46-22N 126-01-28E		None	None
MAP REFERENCE				
15th RTS. USATC, Series 200, Sheet M0290-12HL, 5th ed, Dec 71, Scale 1:200,000				
(SECRET)				
LATEST IMAGERY USED			NEGATION DATE (If required)	
			NA	

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* The name of this plant should be Tung-hua Iron and Steel Plant Tung-pien-tao, as it contains a side-blown converter shop for steel production. Action has been initiated to have the name changed in the Basic Encyclopedia.

BASIC DESCRIPTION

Tung-hua Iron and Steel Plant Tung-pien-tao is located on the west side of Erh-tao-chiang, approximately 4 nm northeast of Tung-hua. The plant is rail and road served, and occupies an irregular-shaped area of approximately 5,000 by 3,100 feet (Figure 12). No security measures have been observed. The Tung-hua Thermal Power Plant Erh-tao-chiang is located to the northwest.

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In February 1972 the plant consisted of a coke by-products section, two by-product coke oven batteries, a sintering plant, two medium blast furnaces, a pig iron casting building, a side-blown converter shop with three converters and two cupola furnaces, a probable forge shop, a probable foundry, a rolling mill, a steam plant, a probable firebrick plant, five workshops, several unidentified buildings under construction, and numerous storage/support buildings.

When the plant was first observed in August 1962 it was not operational. The coke by-products section, one by-product coke oven battery, and the two blast furnaces were in an early stage of construction. The side-blown converter shop with two converters and two cupola furnaces, the rolling mill, the probable firebrick plant, the steam plant, and four workshops (Items 8 and 17) appeared externally complete.

In November 1965 the sintering plant was under construction. By February 1968 the probable forge shop (Item 10) was built. By November 1968, the by-product coke oven battery and the blast furnaces were complete, and a second stack was added to the steam plant.

By April 1970 a second by-product coke oven battery, the probable foundry (Item 13), a workshop (Item 15), a large storage building (Item 14), and an unidentified area (Item 3) were under construction. Between April 1970 and February 1971, a section containing one converter was added to the side-blown converter shop, two conveyors were added to the west end of the sintering plant, and the conveyor system was built at the pig iron casting building.

By November 1971 the second by-product coke oven battery, the pig iron casting building, and the sintering plant were completed. The probable foundry (Item 13), a storage building (Item 14), and a workshop (Item 15) appeared externally complete. Footings and a stack for an unidentified building (Item 12) were also observed under construction. The only change by February 1972 was additional construction in the unidentified area (Item 3).

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The plant has been observed operating on all coverages since November 1968. In February 1972 a high level of activity was observed. The following facilities were operating: two by-product coke oven batteries, the sintering plant, two blast furnaces, the side-blown converter shop, the probable forge shop, the rolling mill, the probable firebrick plant, and the steam plant.

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Key to Annotations
(Figure 12)

<u>Item No.</u>	<u>Description</u>	<u>Dimensions (ft)</u>	<u>Roof Cover (sq ft)</u>	<u>Remarks</u>
1	Coke By-products Section			Under construction in Aug 62. Probably complete by Nov 68.
2	By-product Coke Oven Batteries (2)			One battery under construction in Aug 62. Complete in Nov 68. Second battery built between Apr 70 and Nov 71.
3	Unidentified Area U/C			First observed in Apr 70, construction progressing slowly when observed in Feb 72.
4	Pig Iron Casting Building			Built between Apr 70 and Nov 71. 25X1
5	Sintering Plant			Built between Nov 65 and Nov 71.
6	Blast Furnaces (2)			Medium. Under construction in Aug 62. Operating in Nov 68.
7	Steam Plant	125 x 80	10,000	Present in Aug 62. Second stack added between Feb and Nov 68.
8	Workshops (3)	(a) Irregular (b) Irregular (c)		Present in Aug 62. 25X1
9	Side-blown Converter Shop			Two converters and two cupola furnaces present in Aug 62. Third converter added between Apr 70 and Feb 71. 25X1
10	Probable Forge Shop			Built between Nov 65 and Feb 68. 25X1
11	Rolling Mill	Irregular		Present in Aug 62. 25X1
12	Unidentified Building U/C			First observed under construction in Nov 71.
13	Probable Foundry			Built between Apr 70 and Nov 71. 25X1
14	Storage Building			Built between Apr 70 and Nov 71.
15	Workshop			Built between Apr 70 and Nov 71.
16	Probable Firebrick Plant			Present in Aug 62.
17	Workshop			Present in Aug 62.

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INSTALLATION OR ACTIVITY NAME		COUNTRY
Yen-chuang Iron Plant		CH
UTM COORDINATES	GEOGRAPHIC COORDINATES	25X1
NA	36-03-42N 117-49-13E	
MAP REFERENCE		
15th RTS. USATC, Series 200, Sheet M0381-22HL, 4th ed. Jul 68. Scale 1:200,000		
(SECRET)		
LATEST IMAGERY USED		NEGATION DATE (If required)
		NA

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BASIC DESCRIPTION

Yen-chuang Iron Plant is located 1.7 nm east of Ching-ni-kou and about 26 nm south of Po-shan. The plant is rail and road served, and occupies three irregular-shaped areas connected by rail and road (Figure 13). No security measures have been observed. New road and rail spurs are being constructed which may connect the iron plant with an unidentified plant located approximately 2 nm north-northwest. This unidentified plant has been under construction since January 1968. A possible forge/foundry complex, which is located 1.3 nm west of the iron plant, has been under construction since December 1970. Both of these areas may be associated with the iron plant but this cannot be determined at present.

In January 1972 the plant consisted of the following completed facilities: an ore processing facility, a coal processing facility, four small blast furnaces, and two pig iron casting buildings. Other facilities in various stages of construction were two by-product coke oven batteries, a coke by-products section, a probable ore sintering plant, one medium blast furnace, a possible open-hearth furnace building, a steam plant, and a possible water treatment facility.

When the plant was first observed in October 1963, only the four small blast furnaces were under construction. By November 1966 a rail spur had been constructed to the area. The ore and coal processing facilities were under construction in January 1968.

In December 1970, the two pig iron casting buildings, the medium blast furnace, the probable sintering plant, and the steam plant were in an early stage of construction. By September 1971 the four small blast furnaces, the ore processing facility, and the coal processing facility appeared complete, and the coke by-products section was under construction.

The plant was observed operating for the first time in January 1972. Smoke was coming from the four small blast furnaces, the ore processing facility, and an unidentified area (Item 6).

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Key to Annotations
(Figure 13)

<u>Item No.</u>	<u>Description</u>	<u>Dimensions (ft)</u>	<u>Roof Cover (sq ft)</u>	<u>Remarks</u>
1	Possible Open-hearth Furnace Building U/C			First observed under construction in Jan 72.
2	Possible Water Treatment Plant U/C	Irregular		First observed under construction in Dec 70. 25X1
3	Blast Furnace U/C			Medium. First observed under construction in Dec 70.
4	Steam Plant U/C		20,725	First observed under construction in Dec 70. 25X1
5	Pig Iron Casting Building			Constructed between Dec 69 and Jan 72.
6	Unidentified Activity			
7	Probable Ore Sintering Plant U/C			First observed under construction in Dec 70.
8	By-product Coke Oven Batteries U/C (2)			Construction started between Sep 71 and Jan 72.
9	Coke By-products Section U/C			First observed under construction in Sep 71.
10	Coal Processing Facility			Constructed between Nov 66 and Sep 71.
11	Ore Processing Facility			Constructed between Nov 66 and Sep 71.
12	Pig Iron Casting Building			First observed under construction in Dec 70. Complete by Sep 71.
13	Blast Furnaces (4)			Small. First observed under construction in Oct 63. Complete by Sep 71.

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